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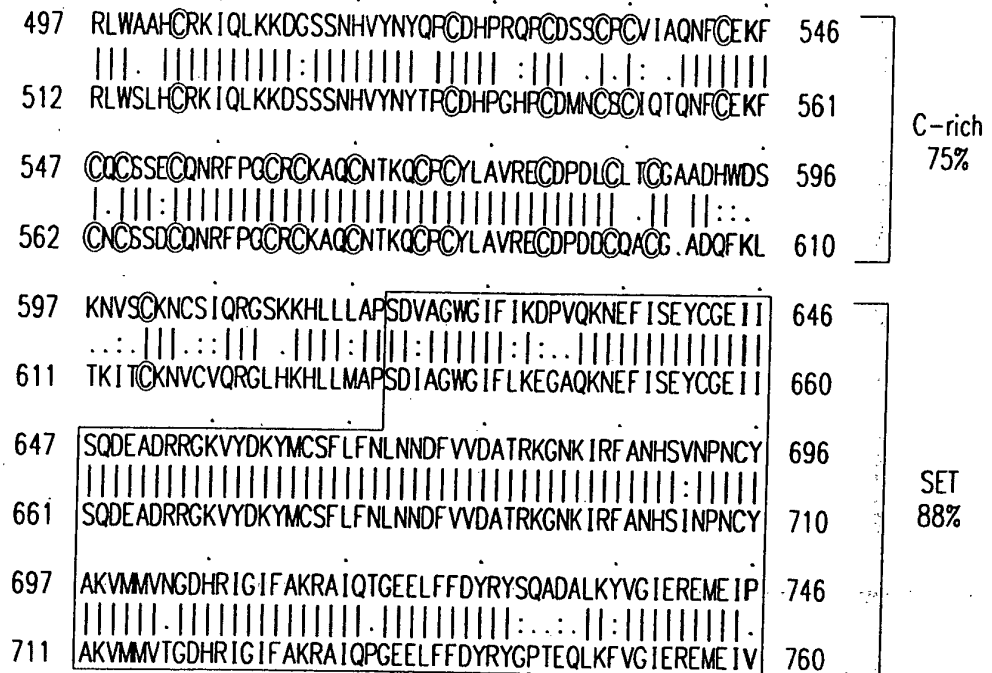


FIG. 1B

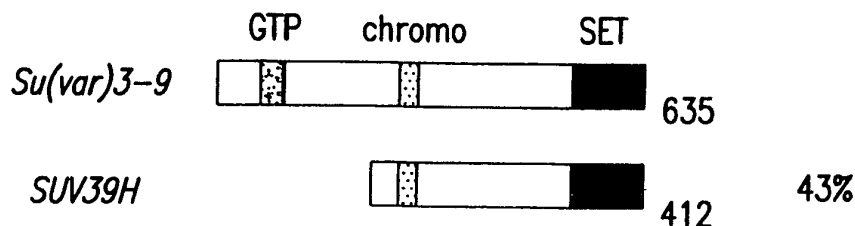
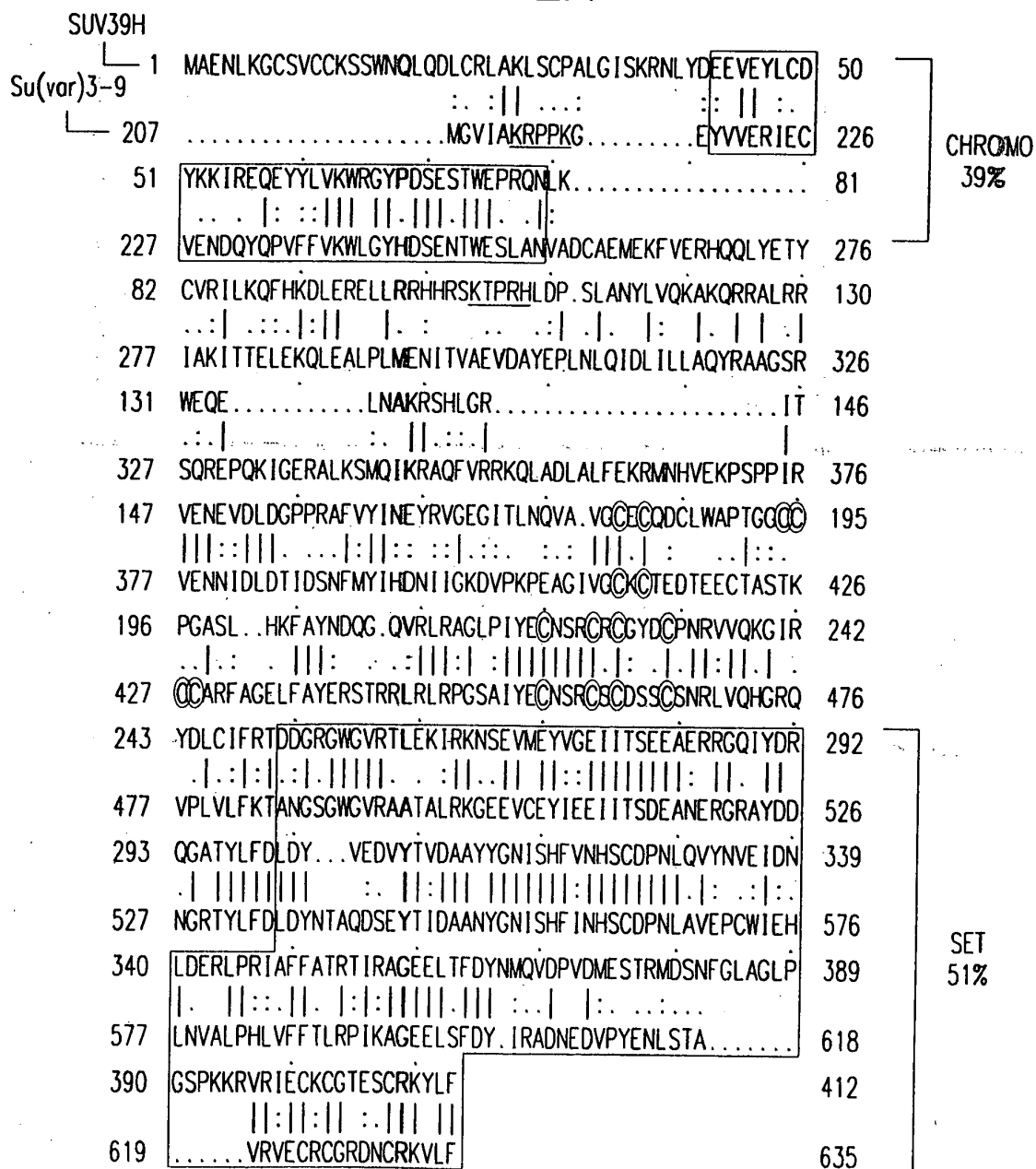


FIG. 2A



ABERRANT TRANSCRIPTS

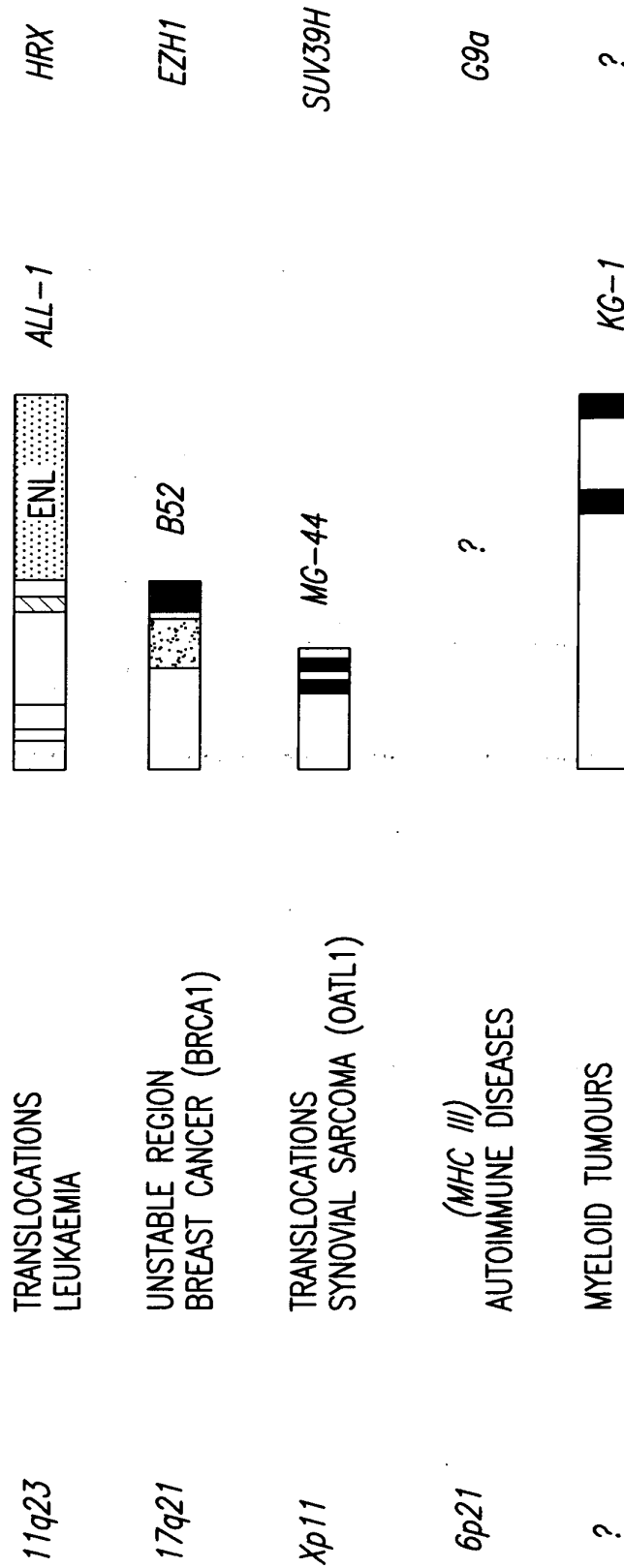
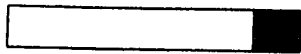



FIG.3


SET PROTEIN FAMILY


S. CEREVISIAE *YHR119*  1080

C. ELEGANS *C26E6.10*  739

DROSOPHILA M.

trx  3751


E(z)  760


Su(var)3-9  635

} SET

HMG I/Y
HRX  3969 46%

HUMAN

EZH2  746 61%

SUV39H  412 43%

G9a  1001

HMG-1

?

FIG.4

E(z)	SDIAGWGIFL	KEGAQKNEFI	SEYCGEIIISQ	DEADRRGKVY	DK..YMCSFL	50
EZH2	SDVAGWGIFI	KDPVQKNEFI	SEYCGEIIISQ	DEADRRGKVY	DK..YMCSFL	
HRX	SPIHGRGLFC	KRNIDAGEMV	IEYAGNVIRS	IQTDKREKYY	DSKIGIG.CYM	
trx	SHIHGRGLYC	TKDIEAGEMV	IEYAGELIRS	TUTDKRERY	DSKIGIG.CYM	
C26	SRIHWGLYA	MESIAPDEMI	VEYIGQTIIRS	LVAEEERKAY	ERRIGIGSSYL	
YHR	SAIHNWGLYA	LDSIAAKEMI	IEYVGERTRQ	PVAEMREKRY	LKNGIGSSYL	
Su3-9	ANGSGWGVRA	ATALRKGEFV	CEYIEEIIITS	DEANERKAY	DDNG..RTYL	
SUV39H	DDGRGWGVRT	LEKIRKNSFV	MEYMGELIITS	EEAERRGQIY	DRQG..ATYL	
G9a	TAKMGWGVRA	LQTIPOGTFI	CEYMGELISD	AEAD...V...	RED..DSYL	
KG-1	TQNKGWGIRC	LDDIAKGSFV	CIYACKILTD	DFADKEGL...	EMG..DEYF	

E(z)	FNLN.....	NDFVVDATRK	GNKIRFANHS	INPCYAKVM	MVTGDH....	100
EZH2	FNLN.....	NDFVVDATRK	GNKIRFANHS	VNPCYAKVM	MVNGDH....	
HRX	FRID.....	DSEVVDATMH	GNARFIFINHS	CEPNCYSRVI	NIDGQK....	
trx	FKID.....	DNLVVDATMR	GNARFIFINHC	CEPNCYSKVV	DILGHK....	
C26	FRID.....	LHHVIDATKR	GNARFIFINHS	CDPNCYAKVL	TIEGEK....	
YHR	FRVD.....	ENTVIDATKK	GGIARFIFINHC	CDPNCTAKII	KVCGRR....	
Su3-9	FOLDYNTAQD	SEYTIIDANY	GNISHFINHS	CDPNLAVFPC	WIEHLNVALP	
SUV39H	FOLDY...VE	DVYTVDAAYY	GNISHFMNHS	CDPNLQVYNV	FIDNLDRLP	
G9a	FOLDNK..DG	EVYCIDARYY	GNISRFIFINHL	CDPNIPVRV	FMLHQDLRFP	
KG-1	ANLDHI..ES	VEYIIDAKLE	GNLGRYLNHS	CSPNLFVQNV	FVDTHDLRFP	

E(z)	RIGIFAKRAI	QPGEELFFDY	..RYGPTQL K....	FVGI	EREMEIV*	150
EZH2	RIGIFAKRAI	QTGEELFFDY	..RYSQADAL K....	YVGI	EREMEIP*	
HRX	HIVIFAMRKI	YRGEELTYDY	..KFPIE.DA	SNKLPCNCGA	KKCRKFLN*	
trx	HIIIFAVRRI	VGGEELTYDY	..KFPFE.D.	EKIPCSGGS	KRCRKLYN*	
C26	RIVIVSRITII	KKGEEITYDY	..KFPIE...	DDKIDCLCGA	KTCRGYLN*	
YHR	RIVIVYALRDI	AASEELTYDY	..KFEREKDD	EERLPCLCGA	PNCKGFLN*	
Su3-9	HLVFFTLRPI	KAGEELSFYD	..IRADNEDVP	YENLSTA...	
SUV39H	RIAFFATRTI	RAGEELTFDY	NMQVDPVME	STRMDSNEGL	AGLPGSPKKR	
G9a	RTAFFSSRDI	RTGEELGFYD	GDRFW..DIK	SKYFTCCGGS	EKCKHISAEAI	
KG-1	WMAFFASKRI	RAGTELTDYD	NYEVG..SVE	GKELLCCCGA	IECR.....	

E(z)
 EZH2

HRX
 trx
 C26
 YHR

Su3-9 VRVECRGGRD NCRKVL*
 SUV39H VRIECKCGTE SCRKYLF*
 G9a AIFOSRIARI NDHDEIIDEI CGLDDVMT.

1999-2000
 2000-2001

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100 0

1

Replacement Sheet
Sheet 7 of 15
Appl. No. 10/773,302; Filed: Feb. 9, 2004
Dkt. No. 0652.1670002/JUK/JCI; Art Unit: 1651
Inventors: Jenuwein et al.; Tel: 202-371-2600
Title: Chromatin Regulator Genes

1141 GAGGCCG CAG AAGAGGACGGCTTCCAATAACAGTAGCAGGCCAGCACCCACCATT 1200
G R R R G R L P N N S S R P S T P T I N
1201 ATGTGCTGGAATCAAAGGATACAGACAGTGATAGGGAAGCAGGGACTGAAACGGGGGAG 1260
V L E S K D T D S D R E A G T E T G G E
1261 AGAACAATGATAAAGAAGAAGAAGAGAAGAAAGATGAACTTCGAGCTCCTCTGAAGCAA 1320
N N D K E E E E K K D E T S S S S E A N
1321 ATTCTCGGTGTCAAACACCAATAAAGATGAAGCCAAATATTGAACCTCCTGAGAATGTGG 1380
S R C Q T P I K M K P N I E P P E N V E
1381 AGTGGAGTGGTGCTGAAGCCTCAATGTTTAGAGTCCTCAITGGCACTTACTATGACAATT 1440
W S G A E A S M F R V L I G T Y Y D N F
1441 TCTGTGCCATTGCTAGGTTAATTGGGACCAAAACATGTAGACAGGTGTATGAGTTAGAG 1500
C A I A R L I G T K T C R Q V Y E F R V
1501 TCAAAGAATCTAGCATCATAGCTCCAGCTCCCGTGAGGATGTGGATACTCCTCCAAGGA 1560
K E S S I I A P A P A E D V D T P P R K
1561 AAAAGAAGAGGAAACACCGGTTGTGGGCTGCACACTGCAGAAAGATACAGCTGAAAAAGG 1620
K K R K H R L W A A H C R K I Q L K K D
1621 ACGGCTCCTCTAACCATGTTTACAACATCAACCCTGTGATCATCCAGGCGAGCCTTGTC 1680
G S S N H V Y N Y Q P C D H P R Q P C D
1681 ACAGTTCGTGCCCTTGTGTGATAGCACAAAATTTTTGTGAAAAGTTTTGTCAATGTAGTT 1740
S S C P C V I A Q N F C E K F C Q C S S
1741 CAGAGTGTCAAACCGCTTTCGGGATGCCGCTGCAAAGCAGTGCAACACCAAGCAGT 1800
E C Q N R F P G C R C K A Q C N T K Q C
1801 GCCCGTGCTACCTGGCTGTCCGAGAGTGTGACCTGACCTCTGTCTTACTGTGGAGCCG 1860
P C Y L A V R E C D P D L C L T C G A A
1861 CTGACCATTGGGACAGTAAAAATGTGTCTGCAAGAACTGCAGTATTACGGGGGCTCCA 1920
D H W D S K N V S C K N C S I Q R G S K
1921 AAAAGCATCTATTGCTGGCACCATCTGACGTGGCAGGCTGGGGGATTTTTATCAAAGATC 1980
K H L L L A P S D V A G W G I F I K D P
1981 CTGTGCAGAAAAATGAATTCTCTCAGAATACTGTGGAGAGATTATTTCTCAAGATGAAG 2040
V Q K N E F I S E Y C G E I I S Q D E A
2041 CTGACAGAAGAGGAAAGTGATGATAAATACATGTGCAGCTTTCTGTTCAACTTGAACA 2100
D R R G K V Y D K Y M C S F L F N L N N
2101 ATGATTTTGTGGTGGATGCAACCCGCAAGGGTAACAAAATTCGTTTTGCAATCATTCCG 2160
D F V V D A T R K G N K I R F A N H S V
2161 TAAATCCAAACTGCTATGCAAAAGTTATGATGGTTAACGCTGATCACAGGATAGGTATT 2220
N P N C Y A K V M M V N G D H R I G I F
2221 TTGCCAAGAGAGCCATCCAGACTGGCGAAGAGCTGTTTTTTGATTACAGATACAGCCAGG 2280
A K R A I Q T G E E L F F D Y R Y S Q A


```
2281 CTGATGCCCTGAAGTATGTCGGCATCGAAAGAGAAATGGAAATCCCTTGACATCTGCTAC 2340
      D A L K Y V G I E R E M E I P *
2341 CTCCTCCCCCTCCTCTGAAACAGCTGCCTTAGCTTCAGGAACCTCGAGTACTGTGGGCAA 2400
2401 TTTAGAAAAAGAACATGCAGTTTGAAATTCGAATTTGCAAAGTACTGTAAAGAATAATTT 2460
2461 ATAGTAATGAGTTTAAAAATCAACTTTTTATTGCCTTCTCACCAGCTGCAAAGTGTTTTG 2520
2521 TACCAGTGAATTTTGCATAATGCAGTATGGTACATTTTCAACTTTGAATAAAGAATA 2580
2581 CTTGAAC TTGTCAAAAAAAA 2600
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FIG. 6C

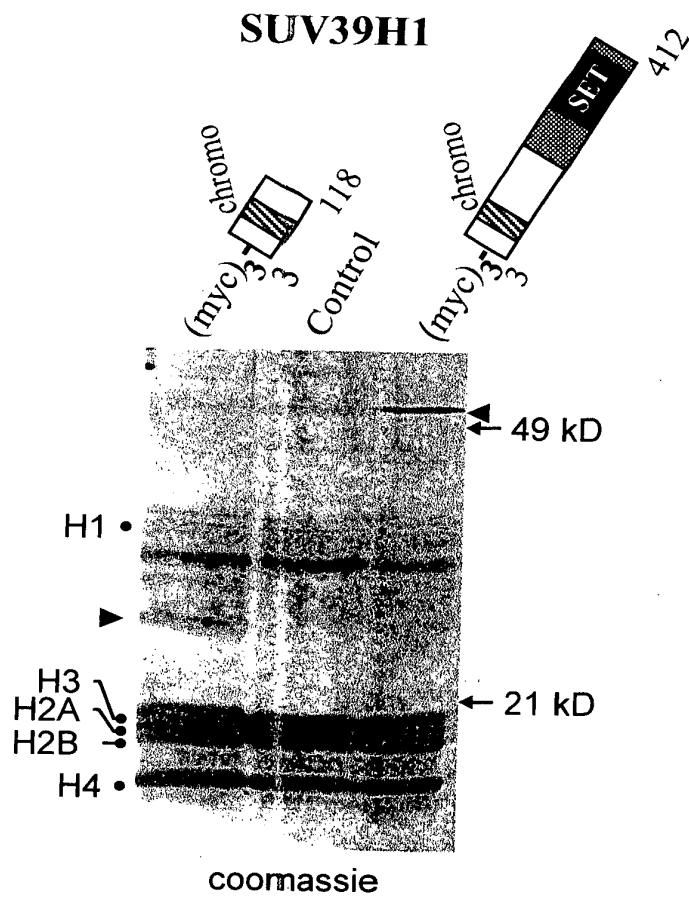
SUV39H length: 2732bp (coding: 45-1284)

```
1  TCGCGAGGCCGCTAGGCCGAATGTCGTTAGCCGTGGGAAAGATGGCCGAAAATTTAA  60
      M A E N L K
61  AAGGCTGCACCGTGTGTGCAAGTCTTCTTGAATCAGCTGCAGGACCTGTGCCGCCCTGG  120
      G C S V C C K S S W N Q L Q D L C R L A
121 CCAAGCTCTCCTGCCCTGCCCTCGGTATCTCTAAGAGGAACCTCTATGACTTTGAAGTCG  180
      K L S C P A L G I S K R N L Y D F E V E
181 AGTACCTGTGCGATTACAAGAAGATCCGCGAACAGGAATATTACCTGGTGAAATGGCGTG  240
      Y L C D Y K K I R E Q E Y Y L V K W R G
241 GATATCCAGACTCAGAGAGCACCTGGGAGCCACGGCAGAATCTCAAGTGTTGCGTATCC  300
      Y P D S E S T W E P R Q N L K C V R I L
301 TCAAGCAGTTCACAAGGACTTAGAAAGGGAGCTGCTCCGGCGGCACCAACCGGTCAAAGA  360
      K Q F H K D L E R E L L R R H H R S K T
361 CCCCCCGGCACCTGGACCCAAAGCTTGGCCAACTACCTGGTGCAGAAGGCCAAGCAGAGGC  420
      P R H L D P S L A N Y L V Q K A K Q R R
421 GGGCGCTCCGTGCTGGGAGCAGGAGCTCAATGCCAAGCCAGCCATCTGGGACCCATCA  480
      A L R R W E Q E L N A K R S H L G R I T
481 CTGTAGAGAATGAGTGGACCTGGACGGCCCTCCGGGGCCTTCGTGTACATCAATGAGT  540
      V E N E V D L D G P P R A F V Y I N E Y
541 ACCGTGTTGGTGAGGGCATCACCTCAACCAGGTGGCTGTGGGCTGCGAGTGCCAGGACT  600
      R V G E G I T L N Q V A V G C E C Q D C
601 GTCTGTGGGCACCCACTGGAGGCTGCTGCCCGGGGGCGTCACTGCACAAGTTGCCTACA  660
      L W A P T G G C C P G A S L H K F A Y N
661 ATGACCAGGGCCAGGTGCGGCTTCGAGCCGGGCTGCCCATCTACGAGTGCAACTCCCGCT  720
      D Q G Q V R L R A G L P I Y E C N S R C
721 GCCGCTGCGGCTATGACTGCCCAAATCGTGTGGTACAGAAGGTATCCGATATGACCTCT  780
      R C G Y D C P N R V V Q K G I R Y D L C
781 GCATCTTCCGACGGATGATGGCGTGGCTGGGGCGTCCGCACCTGGAGAAGATTCCGA  840
      I F R T D D G R G W G V R T L E K I R K
841 AGAACAGCTTCGTATGAGTACGTGGGAGAGATCATTACCTCAGAGGAGGCAGAGCGGC  900
      N S F V M E Y V G E I I T S E E A E R R
901 GGGGCCAGATCTACGACCGTCAGGGCGCCACCTACCTCTTTGACCTGGACTACGTGGAGG  960
      G Q I Y D R Q G A T Y L F D L D Y V E D
961 ACGTGTACACCGTGGATGCCGCTACTATGGCAACATCTCCCACTTTGTCAACCACAGTT  1020
      V Y T V D A A Y Y G N I S H F V N H S C
1021 GTGACCCCAACCTGCAGGTGTACAACGCTTTCATAGACAACCTTGACGAGCGGCTGCCCC  1080
      D P N L Q V Y N V F I D N L D E R L P R
1081 GCATCGCTTTCTTTGCCACAAGAACCATCCGGGAGGCGAGGAGCTCACCTTTGATTACA  1140
      I A F F A T R T I R A G E E L T F D Y N
```

1141	ACATGCAAGTGGACCCCGTGGACATGGAGAGCACCCGCATGGACTCCAAC	1200
	M Q V D P V D M E S T R M D S N F G L A	
1201	CTGGGCTCCCTGGCTCCCCTAAGAAGCGGTCCGATTGAATGCAAGTGTGGGACTGAGT	1260
	G L P G S P K K R V R I E C K C G T E S	
1261	CCTGCCGCAATACCTCTTCTAGCCCTTAGAAGCTGAGGCCAGACTGACTGAGGGGGCC	1320
	C R K Y L F *	
1321	TGAAGCTACATGCACCTCCCCACTGCTGCCCTCCTGTCGAGAATGACTGCCAGGGCCTC	1380
1381	GCCTGCCTCCACCTGCCCCACCTGCTCCTACCTGCTCTACGTTACGGGCTGTGGCCGTG	1440
1441	GTGAGGACCGACTCCAGGAGTCCCCTTTCCCTGTCCCAGCCCCATCTGTGGGTGCACTT	1500
1501	ACAAACCCCCACCCACCTTCAGAAATAGTTTTCAACATCAAGACTCTCTGCTGTTGGGA	1560
1561	TTCATGGCCTATTAAGGAGGTCCAAGGGGTAGTCCCAACCCAGCCCCAGAATATATTG	1620
1621	TTTTTGCACCTGCTTCTGCCTGGAGATTGAGGGGTCTGCTGCAGGCCTCCTCCCTGCTGC	1680
1681	CCCAAAGGTATGGGAAGCAACCCAGAGCAGGCAGACATCAGAGGCCAGAGTGCCTAGC	1740
1741	CCGACATGAAGCTGGTTCCCAACACAGAACTTTGTAAGTAGTGAAGAAAGGGGTCCC	1800
1801	TGGCCTACGGGTGAGGCTGGTTTCTGCTCTGCTTACAGTCTGGGTAGTGTGGCCCT	1860
1861	AAGAGCTGTAGGGTCTCTTCTCAGGGCTGCATATCTGAGAAGTGGATGCCACATGCCA	1920
1921	CTGGAAGGGAAGTGGGTGTCCATGGGCCACTGAGCAGTGAGAGGAAGGCAGTCAGAGCT	1980
1981	GGCCAGCCCTGGAGGTAGGCTGGGACCAAGCTCTGCCTTCACAGTGCAGTGAAGGTACCT	2040
2041	AGGGCTCTTGGGAGCTCTGCGGTGCTAGGGGCCCTGACCTGGGGTGTATGACCGCTGA	2100
2101	CACCACTCAGAGCTGGAACCAAGATCTAGATAGTCCGTAGATAGCACTTAGGACAAGAAT	2160
2161	GTGCATTGATGGGTGGTGATGAGGTGCCAGGCACTAGGTAGAGCACCTGGTCCACGTGG	2220
2221	ATTGTCTCAGGAAGCCTTGAAAACACGGAGGTGGATGCCAGGAAAGGGCCCATGTGGC	2280
2281	AGAAGGCAAAGTACAGGCCAAGAATTGGGGGTGGGGGAGATGGCTTCCCCACTATGGGAT	2340
2341	GACGAGGCGAGAGGGAAGCCCTTGCTGCCGTGCCATTCCCAGACCCAGCCCTTTGTGCTC	2400
2401	ACCTGGTTCCACTGGTCTCAAAGTCACCTGCCTACAAATGTACAAAAGCGGAAGGTTCT	2460
2461	TGATGGCTGCCTTGCTCCTTGCTCCCCACCCCTGTGAGGACTTCTCTAGGAAGTCCCT	2520
2521	CCTGACTACCTGTGCCAGAGTCCCCCTACATGAGACTGTATGCCCTGCTATCAGATGCC	2580
2581	AGATCTATGTGTCTGTGTGTGTCATCCCGCGGCCCCAGACTAACCTCCAGCCAT	2640
2641	GGACTGAATCTGGTTCTCTCTGTACACCCCTCAACCCATGCAGCCTGGAGTGGGCAT	2700
2701	CAATAAAATGAAGTGTGACTGAAAAA	2732

FIG. 7B

1



H3 ← 21 kD

fluorogram

FIG.9A

Suv39h1

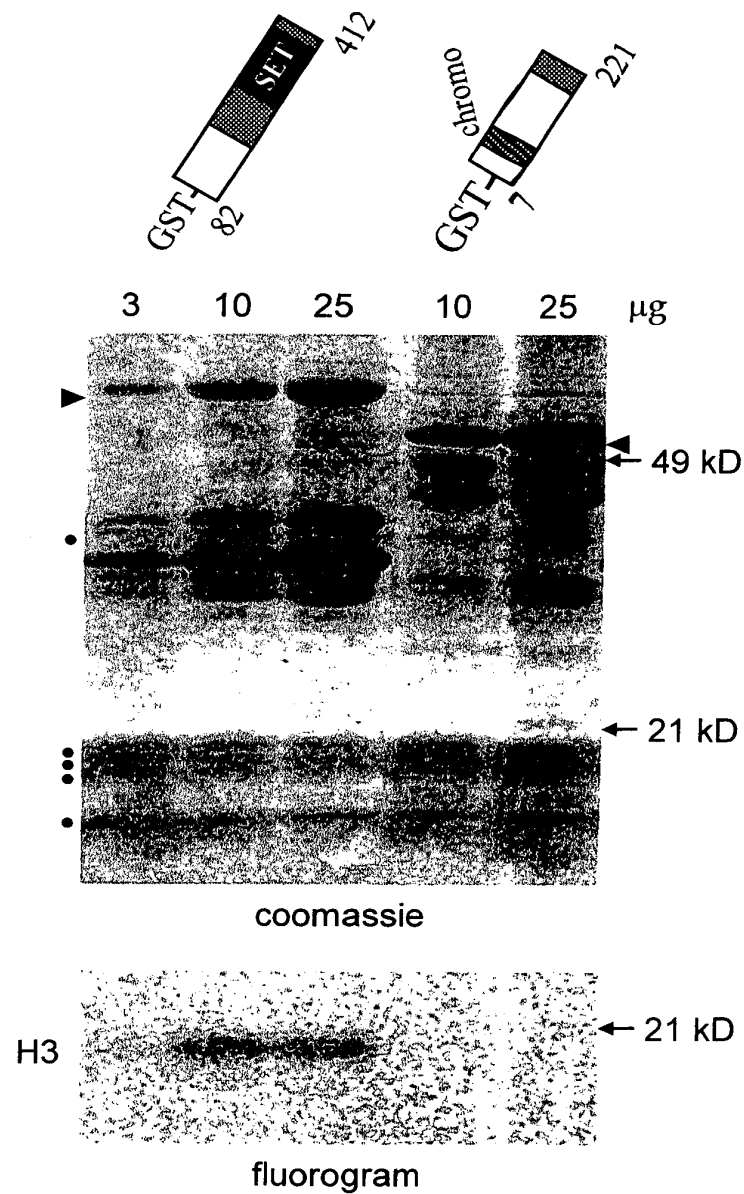


FIG.9B

Suv39h1

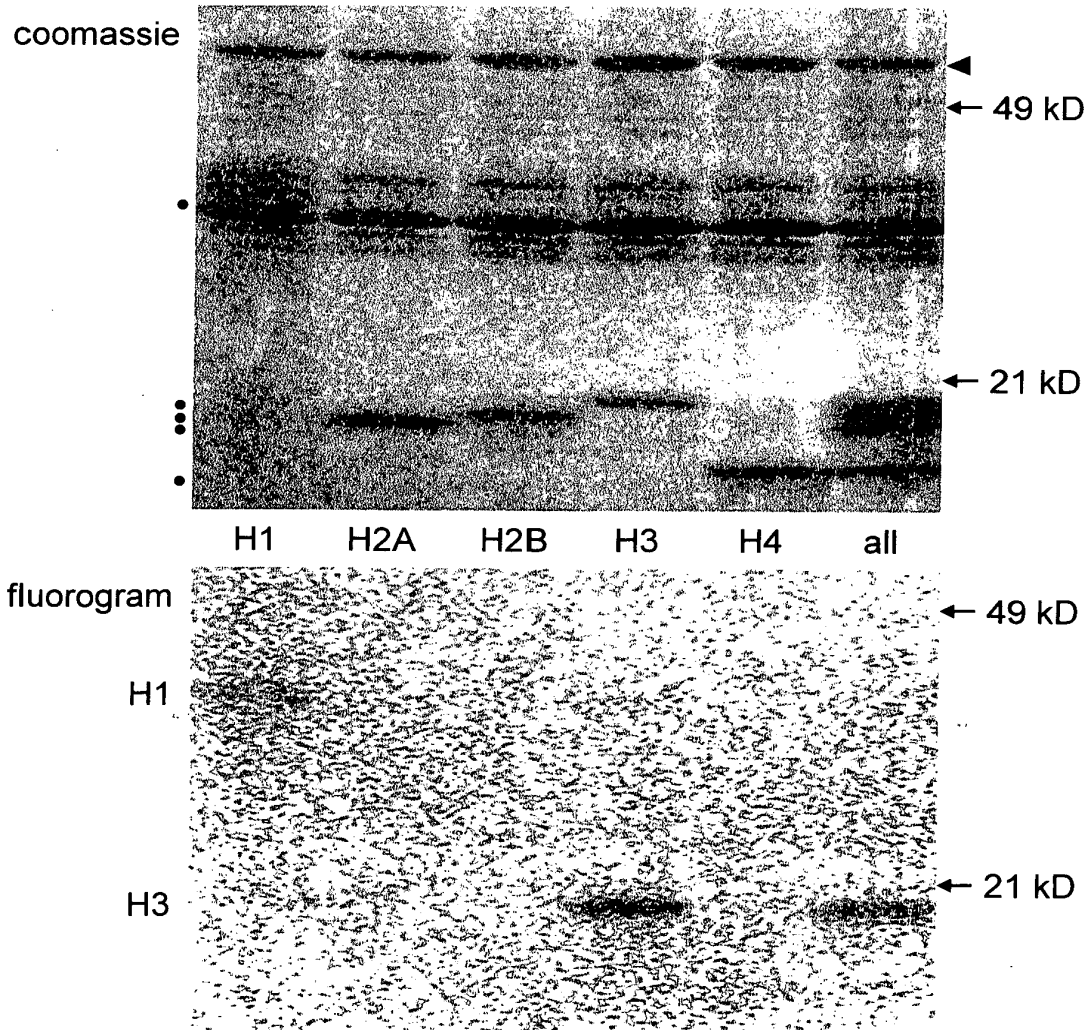
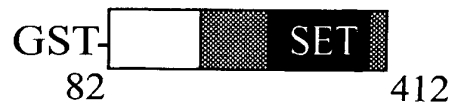


FIG.10A

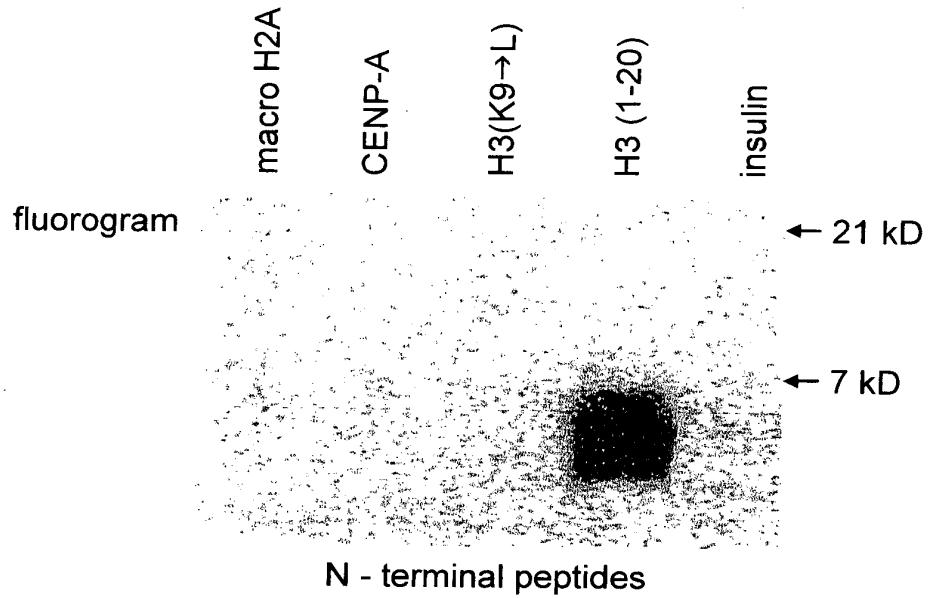


FIG.10B

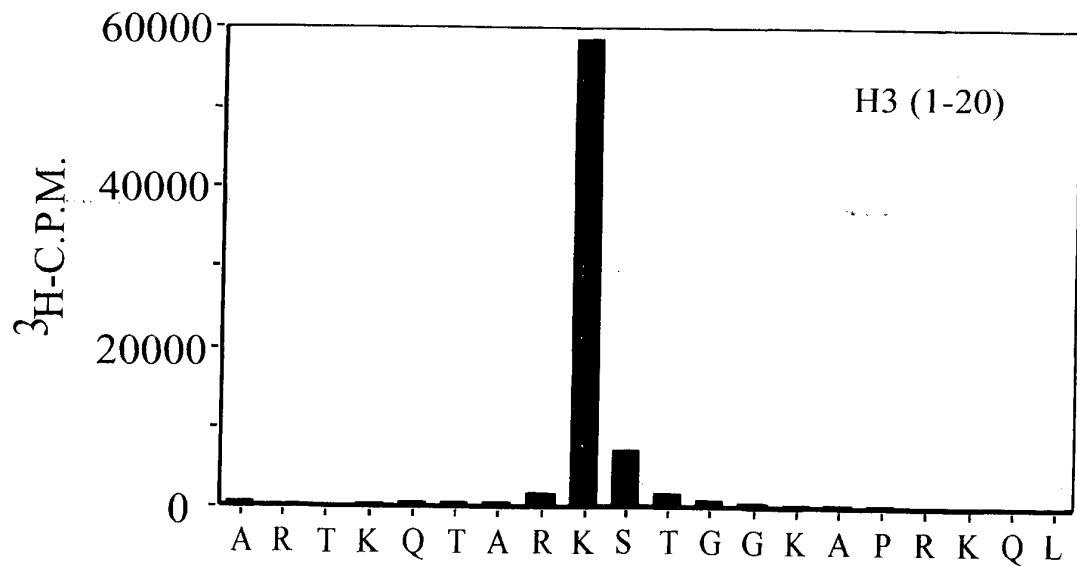


FIG.10C

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